ORIGINAL

TSCA NON-CONFIDENTIAL BUSINESS INFORMATION

DOCUMENT DESCRIPTION	DOCUMENT CONTROL NUMBER	DATE RECEIVED
8EHQ-13- 19070	88130000228	4/18/13

COMMENTS:

DOES NOT CONTAIN CBI

HUNTSMAN

Enriching lives through innovation

MR# 35 35 33

April 17, 2013

Via Overnight Courier

TSCA Confidential Business Information Center (7407M)
EPA East – Room 6428
US Environmental Protection Agency
1201 Constitution Ave, NW
Washington, DC 20004-3302
Attention: TSCA Section 8(e) Coordinator

Draft Final Report of an *in vitro* Mammalian Cell Gene Mutation Assay at the Thymidine Kinase locus ($TK^{+/-}$) using NPG-THPA hemiester, CAS # 41026-17-9

The European office of the Huntsman Advanced Materials Division (Huntsman) has received a draft final report from an *in vitro* Mammalian Cell Gene Mutation Assay at the Thymidine Kinase locus ($TK^{+/-}$) using 4-Cyclohexene-1,2-dicarboxylic acid, 2,2-dimethyl-1,3-propanediyl ester (also referred to as: NPG-THPA hemiester), CAS# 41026-17-9. This study was conducted using the standard OECD 476 protocol: "Genetic Toxicology: In Vitro Mammalian Cell Gene Mutation Test" and was conducted at WIL Research Europe B.V. in the Netherlands. The results of this genetic toxicity study indicate that this product is considered to be mutagenic in this cell culture system in the presence of an S-9 metabolic activation system. While the information was obtained from a draft report, the final report is not expected to be substantially different from this report with regard to the conclusions of the study.

Huntsman is submitting this information pursuant to Section 8(e) of the Toxic Substances Control Act (TSCA). Huntsman has not made a determination as to whether a significant risk of injury to human health or the environment is actually presented by these findings.

These study data can be summarized as follows:

- Although elevated mutation frequencies were observed in the first experiment with S-9 metabolic activation, they occurred at test substance concentrations that produced levels of cytotoxicity outside of the laboratory's criteria for an acceptable study.
- In the second and third experiment with S-9 metabolic activation, elevated mutation frequencies were observed at test material concentrations that were within laboratory's criteria for acceptable cytotoxicity levels for this test system. These increases in mutation frequency were a 4.0 fold increase in the second experiment, and 8.9 fold in the third experiment. Both of these experiments met the laboratory's criteria for an acceptable study, and met the requirements for a positive (mutagenic) response in the presence of S-9 activation.

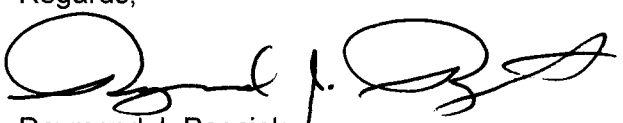
CONTAINS NO CBI

8600 Gosling Road, The Woodlands, Texas 77381
Tel.: 1-281-719-7400 Fax.: 1-281-719-7500 www.huntsman.com

- NPG-THPA hemiester was not mutagenic in this mutagenicity evaluation in the absence of S-9 metabolic activation

As always, if I can provide any additional information on the above study, please call me at (281) 719-3017, or contact me via e-mail at: Ray_Papciak@Huntsman.com.

Regards,



Raymond J. Papciak
Manager, Product Safety

HUNTSMAN
Enriching lives through innovation

MR# 353535

2013 APR 18 AM 11:07
RECEIVED
OPPT CBIC

April 17, 2013

Via Overnight Courier

TSCA Confidential Business Information Center (7407M)
EPA East – Room 6428
US Environmental Protection Agency
1201 Constitution Ave, NW
Washington, DC 20004-3302
Attention: TSCA Section 8(e) Coordinator

Draft Final Report of an *In Vitro* Chromosome Aberration Test in Chinese Hamster Ovary (CHO-WBL) cells using NPG-THPA hemiester, CAS # 41026-17-9.

Dear Sir or Madam:

The European office of the Huntsman Advanced Materials Division (Huntsman) has received a draft final report from an *In Vitro* Chromosome Aberration Assay using 4-Cyclohexene-1,2-dicarboxylic acid, 2,2-dimethyl-1,3-propanediyl ester (also referred to as: NPG-THPA hemiester), CAS# 41026-17-9. This study was conducted using a standard OECD 473 protocol: "In Vitro Mammalian Chromosome Aberration Test" and was conducted at WIL Research Laboratories in Skokie, IL. The results of this genetic toxicity study indicate that this substance is considered to be clastogenic in this cell culture system in the presence of an S-9 metabolic activation system. No clastogenic effects were observed in the absence of an S-9 metabolic activation system. While the information was obtained from a draft report, the final report is not expected to be substantially different from this report with regard to the conclusions of the study.

Huntsman is submitting this information pursuant to Section 8(e) of the Toxic Substances Control Act (TSCA). Huntsman has not made a determination as to whether a significant risk of injury to human health or the environment is actually presented by these findings.

These study data can be summarized as follows:

- In the presence of an S-9 metabolic activation system, NPG-THPA hemiester induced statistically significant, dose-dependent increases in the number of cells with chromosome aberrations.
- In the presence of an S-9 metabolic activation system, NPG-THPA hemiester induced a statistically significant increase in the number of cells with greater than 1 aberration per cell in the highest concentration tested (4250 mcg/mL).
- No increases in the number of cells with chromosome aberrations were observed in the absence of an S-9 metabolic activation system using NPG-THPA hemiester.

CONTAINS NO CBI

8600 Gosling Road, The Woodlands, Texas 77381
Tel.: 1-281-719-7400 Fax.: 1-281-719-7500 www.huntsman.com

- There were no effects on the number of polyploid cells or the number of cells with endoreduplicated chromosomes using NPG-THPA hemiester either in the presence or absence of an S-9 metabolic activation system. It can be concluded that this substance does not affect mitotic processes and cell cycle progression and does not induce numerical chromosome aberrations under the conditions of this study.
- This study met the laboratory's criteria for a positive (clastogenic) response, and also met the laboratory's criteria for an acceptable study.

As always, if I can provide any additional information on the above study, please call me at (281) 719-3017, or contact me via e-mail at: Ray_Papciak@Huntsman.com.

Regards,

Raymond J. Papciak
Manager, Product Safety

From: (281) 719-3028
Maryann DeMaria
Huntsman Corporation
8600 Gosling Road

THE WOODLANDS, TX 77381

Origin ID: MIFA

FedEx Express

J13111302120326

Ship Date: 17APR13
ActWgt: 0 5 LB
CAD: 101155237/INET3370

Delivery Address Bar Code

Ref # Ray Papciak
Invoice #
PO #
Dept #

SHIP TO: (202) 564-8940 BILL SENDER

TSCA Section 8(e) Coordinator
USEPA - TSCA CIBT (7407M)
1201 Constitution Ave, NW
EPA East - Room 6428
WASHINGTON, DC 20004

THU - 18 APR 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7995 4465 3730

XC RDVA

20004
DC-US
DCA

518G1/64BE/93AB

After printing this label:
1 Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.